

Remarks

The Examiner has rejected all of the originally presented claims, as unpatentable, 35 USC 103(a), over Aylward et al US Patent Application publication 2004/0028369 (hereinafter Aylward) in view of Koester et al patent 3,670,260 (hereinafter Koester). In addition, the Examiner had pointed out errors in claims 3, 5, 15, 17, and 18. In response thereto applicant has amended claim 1 to include the subject matter of prior dependent claim 7 and amended claim 16 to include the subject matter of prior dependent claim 17, has amended claims 3, 5, and 18 to correct the errors noted by the Examiner, has canceled claims 4, 6, 7, 11-15, and 17, and has added new claims 19 through 25 further to protect applicant's invention

Neither Aylward nor Koester is concerned with the problem to which applicant's invention is directed and both are so dissimilar to applicant's structure as not to provide any disclosure or suggestion to one skilled in the art with respect to applicant's invention, as claimed.

Aylward discloses and teaches a projection screen where "there may be several hundreds or even thousands of waveguides adhered to one another." (para 0005) As depicted in Aylward Fig. 4, light from a projector enters the waveguide's entrance aperture and then bounces along the waveguide until it reaches the exit aperture, at which point the light is spread in the horizontal and vertical directions by light shaping film 38. In order to absorb ambient light, introduced to the waveguide via the exit aperture, each waveguide is surrounded by a black layer that is optically isolated from the waveguide via a lower refractive index material such that ambient light from extreme angles leaks out of the sides of the waveguides to be absorbed by the black cladding. Aylward's projection screen thus receives light from the projector at one end of the waveguide and ambient light into the other end. Aylward's teaching and disclosure are how to absorb the ambient light without absorbing the light from the projector. Aylward has no disclosure or teaching that is in any way concerned with homogenization.

Koester's disclosure concerns projecting a laser beam through air and through not one but, in fact, two diffusers, the first of which includes the optical member 20 with a truncated conical surface 22 and uses a field-stop (i.e. aperture) to preclude light beyond a certain angular extend from passing. Koester projects the laser beam of light through air and there is no reason or motivation for the addition of any waveguide structure to the Koester controlled optical beam forming device.

Applicant submits that this is precisely the type of situation wherein there must be some motivation or suggestion for making a combination before such a combination can be applied, 35 USC 103, against an applicant's claims. As stated in In re Mills (Fed Cir. 1990) 926 F.2d 680, 682, 16 USPQ2d 1430,1432, although the prior art " may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." Applicant submits that there is nothing in either Aylward or Koester to suggest to one of ordinary skill in the art to somehow combine their two disparate disclosures. The Koester use

of diffusers in a laser light beam would not suggest to one in the art that it could be combined with Aylward's projector system using the Aylward waveguides. Nor is there anything in Aylward that would suggest that the Koester diffusers should be added before the entrance apertures of the Aylward multiple waveguides. Nor would such a combination result in the structure of applicant's invention, as set forth in the claims now being presented.

Applicant's invention, in one aspect, involves the use of a mild diffuser and all of the independent claims now being presented clearly recite the definition of "mild" diffusers. In this regard applicant submits that the Examiner has made what can only be thought of as an overreaching statement when he states, after acknowledging that Koester does not set forth a scattering angle for his diffuser, that "Any suitable scattering angle value would thus have been obvious." This appears to applicant to turn the question of prior art disclosure and obviousness on its head, namely the Examiner's assertion that since nothing has been said, everything is, *per se*, obvious.

Claims 1, 2, 4, 5, 8-10, 16 and 18, as amended, are submitted clearly to be patentable since, even if Aylward and Koester are in some way combined, as by directing the Koester laser beam through the Koester diffusers into the multiple waveguides of Aylward, the result is not relevant to applicant's invention as set forth in these claims nor does such a combination include the specific mild diffuser, as recited in claims 1 and 16, as amended. As stated by applicant (para 0005) "Unlike the diffusers that have been previously used in diffuser backlights, the diffuser in accordance with my invention has a controlled scattering angle of less than about eight degrees and most advantageously of less than ± 5 degree full-width half-maximum (FWHM) scatter and is referred to herein as a 'mild diffuser' to contrast it from the prior art diffuser arrangements".

It is further an aspect of applicant's invention to "overcome irregularities due to periodic structures that supply the source of collimated light" (para 0006). The specific source of collimated light that gives rise to this problem includes then array of collimated light sources, including the non-imaging collimators 22 optically driven by optical fibers, as shown in Fig. 1 and described at page 4 (para 0014). Applicant's inventive solution is to use both a light guide that can strip out high angle light to provide a uniform output and, significantly, a very specific diffuser positioned before the light guide.

New claims 19 to 25 are specifically directed to this aspect of applicant's invention. Thus new claim 19 recites the three essential elements of the unique combination of applicant's invention, namely, the array of collimated light sources that can give rise to irregularities, the specific mild diffuser that has a controlled scattering angle of less than about eight degrees, and the homogenizer comprising a light extraction guide, an optical constraining layer and an optical absorbing layer.

The dependent claims further define the nature and structure of the mild diffuser, the structure of the homogenizer, the structure of the array of discrete collimated light sources, and

Serial No.: 10/752,461
Art Unit: 2874
Confirmation No.: 3459

Attorney's Docket No.: H0004743-5733
Page 8

the structure of a light extraction guide, all directed to the improvement in back level contrast and image sharpness attained by applicant's unique and non-obvious combination of elements.

Accordingly, applicant respectfully submits that there is no reason or purpose for any combination of Aylward and Koestler and that these references, as well as the other art cited but not applied by the Examiner, do not suggest or teach applicant's specific invention as set forth in the claims now being presented.

Reconsideration and allowance of claims 1, 2, 3, 5, 8, 9, 10, 16, 17, and 18 and favorable consideration and allowance of new claims 19 to 25 are therefore respectfully requested.

It is believed that this application is in condition to be passed to issue, and such action is also respectfully requested. However, if the Examiner deems it would in any way expedite the prosecution of this application, he is invited to call applicant's attorney at the number set forth below.

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Respectfully submitted,

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